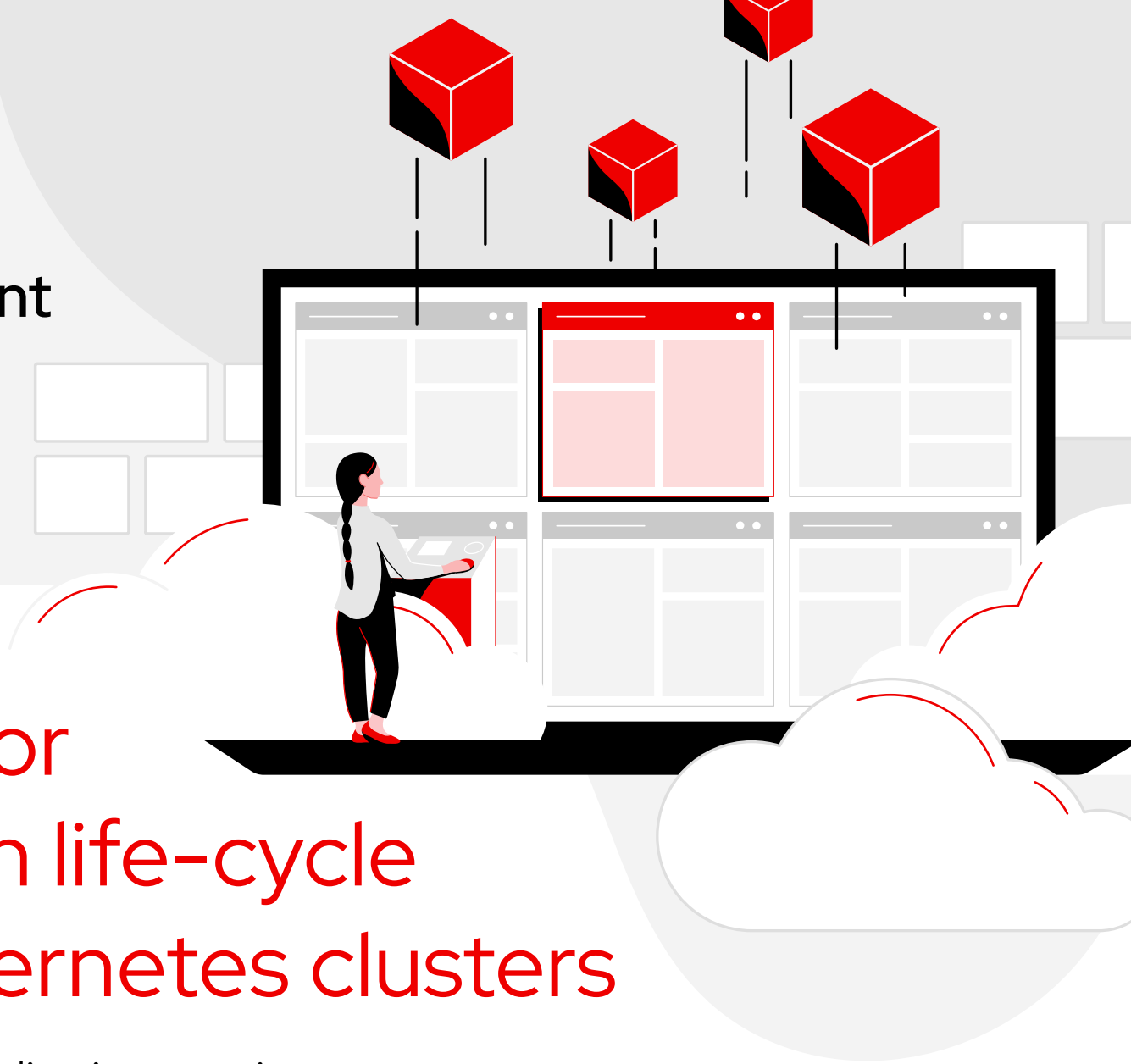




Key considerations for advanced application life-cycle management in Kubernetes clusters

Deploying and managing the life cycles of applications running across your Kubernetes cluster environment is as important as overall cluster management. DevOps teams need unified and simplified options for constructing and deploying applications and application updates automatically and at scale. Here are three ways Red Hat® Advanced Cluster Management for Kubernetes can help.



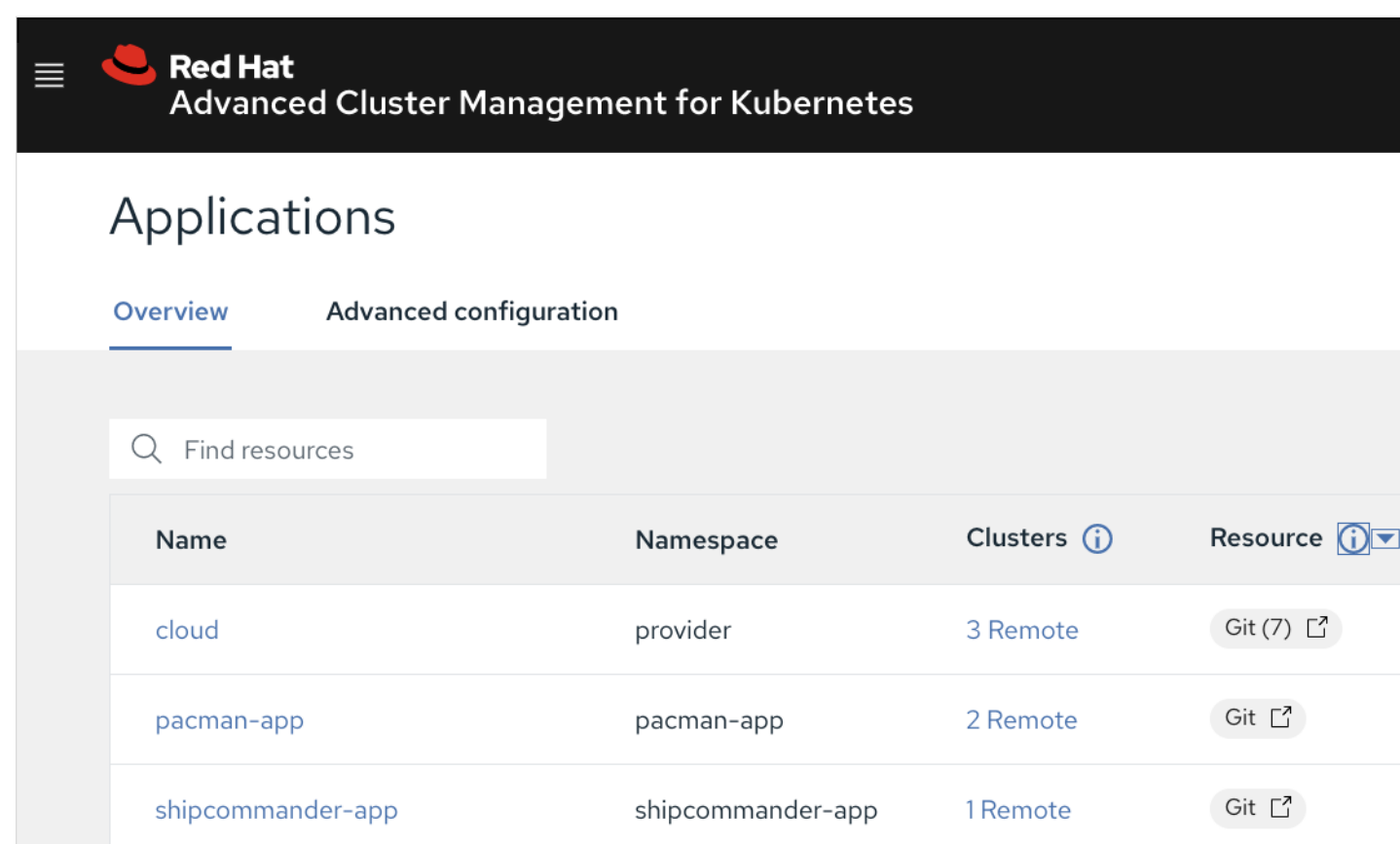
1. More easily deploy applications at scale

An important feature of a unified multicluster Kubernetes management system is the ability to use one tool to consistently manage the life cycle of the containerized applications running within the clusters.

With Red Hat Advanced Cluster Management, you can:

- ▶ **Manage the full application life cycle** across the entire hybrid cloud Kubernetes environment. Define, create, update, and remove applications on any Kubernetes cluster, on-premise or in the cloud. Clusters and applications are all visible and managed from a single console, with built-in security policies.
- ▶ **Automatically deploy applications to specific clusters** based on channel and subscription definitions, by integrating repositories like Git, Helm, and object storage. These repositories are defined as channels, and applications subscribe to channel resources. Placement rules then define where the applications are deployed.
- ▶ **Automate the application life cycle with Red Hat Ansible® Automation Platform.** Execute Ansible Playbooks as pre- and post-hooks in the application deployment process. For example, you can open a ServiceNow incident, update an incident, or update the F5 load balancer configuration.

Create and view applications and associated resources



Name	Namespace	Clusters	Resource
cloud	provider	3 Remote	Git (7)
pacman-app	pacman-app	2 Remote	Git
shipcommander-app	shipcommander-app	1 Remote	Git



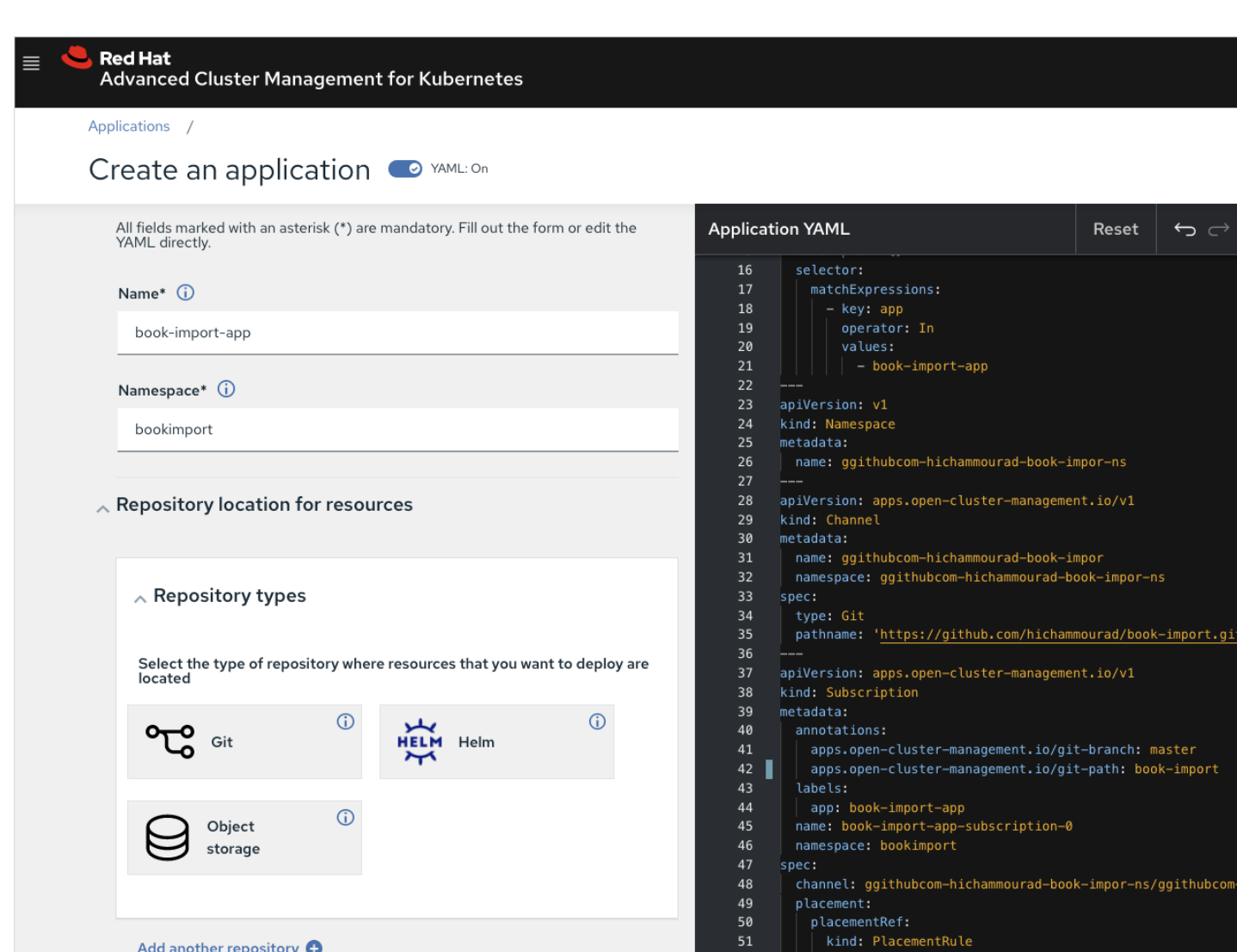
2. Deploy applications from multiple sources

Source control management tools like Git are widely used in the developer community. These repositories are the source of truth for code and application resources. As developers write and update code in their repositories, they need applications that are running across the cluster environment to be automatically updated.

With Red Hat Advanced Cluster Management, you can:

- ▶ **Define applications using open standards and deploy the applications using placement policies** that are integrated into existing continuous integration/continuous delivery (CI/CD) pipelines and governance controls.
- ▶ **Deploy applications using GitOps methodologies** by defining the repositories as channels. By writing or updating code and application resources in the repositories, the applications are automatically redeployed with the newer code.
- ▶ **Support Git, Helm, and Object Store repository integration** to offer the flexibility of choice.
- ▶ **Integrate with Argo CD**, a common application life-cycle tool, to simplify and add security to application deployments.

Easily deploy applications from Git, Helm, or Object Storage



Create an application ☒ YAML On

All fields marked with an asterisk (*) are mandatory. Fill out the form or edit the YAML directly.

Name*

Namespace*

Repository location for resources

Repository types

Select the type of repository where resources that you want to deploy are located

☒ Git ☐ Helm ☐ Object storage

Add another repository

Application YAML

```
16 selector:
17   matchExpressions:
18     - key: app
19       operator: In
20       values:
21         - book-import-app
22 ---
23 apiVersion: v1
24 kind: Namespace
25 metadata:
26   name: githubcom-richamoured-book-import-ns
27 ---
28 apiVersion: apps.open-cluster-management.io/v1
29 kind: Channel
30 metadata:
31   name: githubcom-richamoured-book-import
32   namespace: githubcom-richamoured-book-import-ns
33 spec:
34   type: Git
35   pathnames: 'https://github.com/richamoured/book-import.git'
36 ---
37 apiVersion: apps.open-cluster-management.io/v1
38 kind: Subscription
39 metadata:
40   annotations:
41     apps.open-cluster-management.io/git-branch: master
42     apps.open-cluster-management.io/git-path: book-import
43   labels:
44     app: book-import-app
45   name: book-import-app-subscription-0
46   namespace: bookimport
47 spec:
48   channel: githubcom-richamoured-book-import-ns/githubcom-
49   placement:
50     placementRef:
51       kind: PlacementRule
52       name: book-import-app-placement-0
```



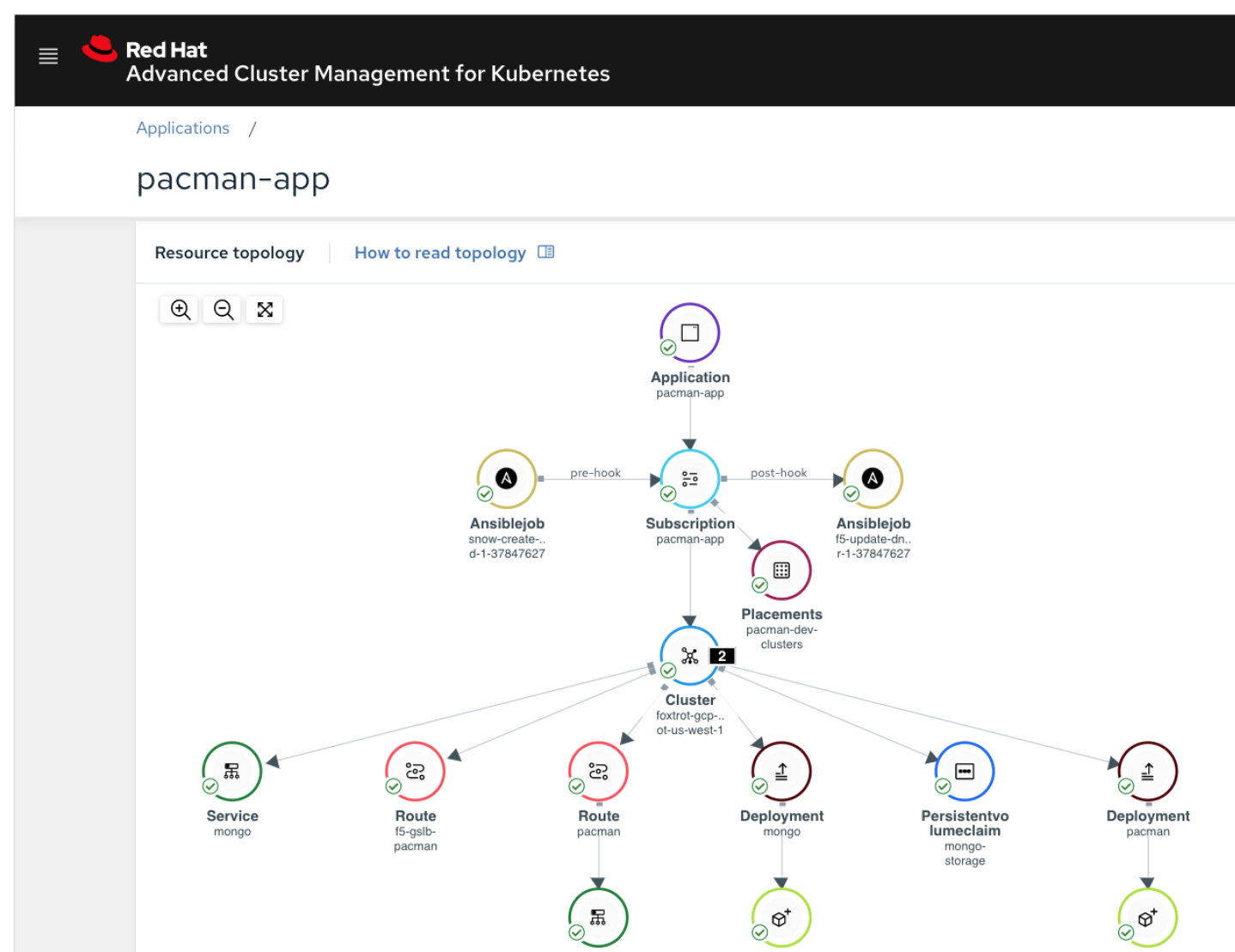
3. More quickly visualize application relationships across clusters

As the use of modern containerized applications grows, it's important to have visibility into application inventory, health, and performance—and be able to more easily search on any application constructs and related Kubernetes resources.

With Red Hat Advanced Cluster Management, you can:

- ▶ **View an aggregated list of deployed applications** with the ability to edit, search, and delete applications. Identify which clusters the application is deployed to, any deployment time windows, and the creation date.
- ▶ **View a detailed graphical application topology** that links the application and its related resources. For example, you can see the subscription, any Red Hat Ansible Automation Platform jobs, and the clusters the application is deployed to, as well as other resources like deployments, replica sets, services, and routes.
- ▶ **Make updates graphically or using code.** The graphical user interface (UI) for application deployment also provides editing capabilities and a side-by-side view with the Infrastructure-as-Code (IaC) YAML.
- ▶ **Troubleshoot deployments from the visual indicators.** If a deployment has an issue, the visual queue shows yellow or red, with the ability to view the pod YAML, and logs to see errors.

Application topology view with its associated resources



To learn more about Red Hat Advanced Cluster Management for Kubernetes, sign up for a free trial.

Get the free trial